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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
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10/685,149

10/14/2003

Larry R. Cox

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04/15/2005

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EXAMINER

LE, THANH TAM T

ART UNIT

PAPER NUMBER

2839

DATE MAILED: 04/15/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

AKC

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/685,149             | COX, LARRY R.       |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Thanh-Tam T. Le        | 2839                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 24 January 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 January 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |                                                                                                                                            |                                                                                         |
|--------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                                       | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/31/05</u> | 6) <input type="checkbox"/> Other: _____                                                |

## DETAILED ACTION

### *Claim Objections*

1. Claims 1-34 are objected to because of the following informalities:  
  
Claim 1, line 4, "the longitudinal orientation" lacks an antecedent basis;  
  
Claim 1, line 10, "an unmated position" should be changed – the unmated position --;  
  
Claim 1, line 11, "a mated position" should be changed to – the mated position --;  
  
Claim 10, line 2, "the transverse range" lacks an antecedent basis;  
  
Claim 30, lines 3 and 4 and claim 32, lines 3 and 4, "a predetermined lateral position" should be changed – the predetermined lateral position --;  
  
Appropriate correction is required.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:  
  
(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.
3. Claims 1-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Loder et al. (6,419,399).  
  
Regarding claims 1-2, 13, 19, 22, 27-29 and 31, Loder et al., figures 2-4, disclose a fiber optic connector alignment system comprising:
  - a base (102) configured for mounting on a first substrate (106);

- a housing (150) movably engaged with the base, the housing configured to secure a terminating ferrule (170) for an optical fiber (174), a longitudinal orientation of the optical fiber within the terminating ferrule defining a longitudinal axis, the housing movable along the longitudinal axis between a mated position and an unmated position; and
- a spring element (184) biasing the housing along the longitudinal axis toward the unmated position; and
- alignment means;

wherein the housing having a longitudinal range of motion and a lateral range of motion, with respect to the base (column 6, lines 56-67).

Loder et al. disclose the instant claimed invention as described above except for the lateral range of motion when the housing is in the unmated position is less than the lateral range of motion when the housing is in the mated position; and the lateral range of motion varies as the housing is moved through the longitudinal range of motion.

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Loder et al. to have the lateral range of motion when the housing is in the unmated position is less than the lateral range of motion when the housing is in the mated position; and the lateral range of motion varies as the housing is moved through the longitudinal range of motion, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233, in order to have a better connection.

Regarding claim 3, figure 2, a mating connector (120) disposed on a second substrate (104).

Regarding claim 4, the housing having an angular range of motion, which is reduced when the housing is in the unmated position.

Regarding claims 5 and 18, figure 2, the housing is configured to secure a plurality of terminating ferrules.

Regarding claim 6, the housing having a transverse range of motion, which is reduced when the housing is in the unmated position.

Regarding claims 7 and 8, Loder et al. disclose the instant claimed invention as described above except for the lateral range of motion is in the range of 0.03 to 0.05 inches when the housing is in the mated position and less than 0.01 inches when the housing is in the unmated position. It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide Loder et al. to have the lateral range of motion is in the range of 0.03 to 0.05 inches when the housing is in the mated position and less than 0.01 inches when the housing is in the unmated position, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 105 USPQ 233, in order to have a better connection.

Regarding claims 9-11, figure 4, disclose the housing including a pair of channels (a channel is a slit between 156 and 158) configured to engage a pair of mating rails (each edge of a receiving slot 160) on the base member, wherein the rails are shaped

to restrict the lateral/transverse range of motion of the housing as the moves longitudinally toward the unmated position.

Regarding claim 12, the housing including a tapered notch (a slit between 156 and 158) configured to engage a smaller mating protrusion (an edge of a receiving slot 160) on the base member, wherein a size different between the tapered notch and the mating protrusion decreases as the housing moves toward the unmated position.

Regarding claims 14 and 15, the spring element urges the housing to a forward position, the lateral range decreases as the housing approaches the forward position.

Regarding claim 16, the longitudinal range of motion comprising a first and second portions and the lateral range varies in the second portion.

Regarding claim 17, the housing having an angular range of motion with respect to the base in the first portion.

Regarding claims 20 and 21, the first substrate is substantially parallel/orthogonal to the second substrate.

Regarding claim 23, the predetermined lateral position is substantially centered along the lateral range of motion.

Regarding claim 24, the lateral range of motion increases as the housing moves away from the forward position.

Regarding claims 25 and 26, the conductor comprising an optical conductor and an electrical conductor.

Regarding claims 30 and 32-34, the alignment means comprising a channel on the housing (a slit between 156 and 158) configured to engage a mating protrusion (an

edge of a receiving slot 160) on the base member, wherein the channel and protrusion are cooperatively shaped to direct the housing to a predetermined lateral position as the housing moves toward the forward position.

### ***Response to Arguments***

4. Applicant's arguments with respect to claims 1-34 have been considered but are moot in view of the new ground(s) of rejection.

### ***Conclusion***

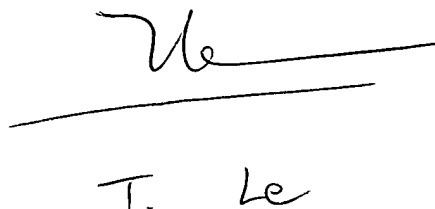
5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thanh-Tam T. Le whose telephone number is 571-272-2094. The examiner can normally be reached on 7:30-5:00.

6. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, TC Patel can be reached on 571-272-2098. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2839

7. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TL.  
04/13/05.



T. Le